Vol. 2 No. 1 October 1998

Oil Spill Program Update

The U.S. EPA's Oil Program Center Report

ABOUT THE UPDATE

EPA's "Oil Spill Program Update" is produced quarterly, with information coming from the Regions in response to their needs. The goal of the Update is to provide straight-forward information to keep EPA Regional staff, other federal agencies and departments, industries and businesses, and the regulated community current with the latest developments. The Update is distributed in hardcopy and is available on the Oil Program homepage at ***www.epa.gov/oilspill***.

Lookout Mountain Pipeline Rupture

In February 1996, 60 to 70 thousand gallons of fuel oil and kerosene were accidentally released when an 8-inch pipeline burst on Lookout Mountain, near Chattanooga, Tennessee. The spill threatened to impact the Tennessee River, located only 300 feet down gradient from the site. Despite a rapid response from the potentially responsible party (PRP) and local officials, responders were unable to account for much of the discharged material. Response actions focused on the cleanup and containment of free product, while investigations into the site geology were conducted to aid in locating the remainder of the spill.

With federal and state officials providing oversight, the PRP repaired the ruptured pipeline and collected the free product that had accumulated in a natural depression at the base of a ravine. Response teams cleared debris from the ravine and constructed an underflow dam for collecting free product in the depression. As the cleanup continued, it became apparent that the location of the majority of the discharged material was unknown. Only 2,000 gallons of the material could be collected from the collection area.

The site investigation took on a more dynamic approach to address this problem while continuing the cleanup process. In addition to conducting research to locate the remainder of the spill, crews excavated all visibly contaminated soil in the collection basin. Crews also deployed containment booms while initiating 24-hour sheen monitoring of the two creeks running along the east and west flanks of the mountain as well as in the Tennessee River. Excavation and restoration of trees and soil were completed in the collection basin within a few weeks. Continued monitoring of the river and creeks failed to detect any evidence of the discharged material.

On the third day of cleanup activities responders were given another clue as to the location of the missing product which served to emphasize the need for a thorough geological investigation of the mountain. Visitors to the Chickamauga National Military Park reported a hydrocarbon odor emanating from a vent in the side of Lookout Mountain, over one mile from the pipeline rupture. Confirmation of the presence of hydrocarbon vapors indicated to researchers that some of the spill had impacted the cave system beneath Lookout Mountain.

Researchers used a number of sampling and survey techniques to try to locate the missing material.

A dye trace test using Sulphorhodamine B confirmed that the discharge could potentially impact surface waters as the dye resurfaced directly down gradient in the river. Groundwater samples taken from nearby wells failed to reveal any indication of oil contamination. Coring tests confirmed the presence of discharged product in the soil beneath the collection area, but did not locate any free product. Mass balance calculations suggest that 16 thousand gallons of oil or more may be bound up in soil beneath the collection area. While the actual location of the oil was never identified, these techniques did provide greater understanding of the geological structure of Lookout Mountain and its cave system. The impact to the cave system is thought to be limited to the cave air. Researchers also speculated that if any free product remains in the caves, it may be trapped at the submerged entrances to one or more caves. The water in the submerged cave mouths may block the flow of oil while allowing the passage of water, thus acting as natural containment booms. The hydrocarbon vapors emanating from vents in Lookout Mountain may come from oil that is trapped in the soil or free product in caves or cave fractures. Air monitoring of the cave system indicates that hydrocarbon vapors are diminishing but it is not known whether this is due to weathering and/or dissipation of product.

EPA and the National Park Service (NPS) espoused different approaches to remediate the site. The EPA On-Scene Coordinator (OSC) for the site sought mitigation of potential threats to human health and the environment. The OSC felt that the PRP's action to limit excavation to areas of gross contamination was consistent with the National Contingency Plan. NPS, as a resource trustee, follows a "zero impact tolerance," and was concerned that the hydrocarbon vapor would impact cave organisms. The caves are popular spelunking areas and had to be closed due to the exposure risks posed by the hydrocarbon vapors. Ultimately, the high degree of cooperation between the PRP and all response organizations allowed the removal process to continue unimpeded by the many political and regulatory issues raised by the unique characteristics of the spill. For more information on this unusual incident, please contact Bob Rosen, EPA Region IV, (404) 562-8761.

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Contingency Plan Study

The National Response Team (NRT) is issuing a study to encourage coordination of local level emergency planning and Area Contingency Plans under the Oil Pollution Act of 1990 (OPA). The study describes examples of effective coordination in local emergency planning and contains case studies identifying what made the coordination effective.

OPA establishes Area Committees comprised of qualified members of federal, state, and local government agencies. Each Area Committee, under the direction of the federal On-Scene-Coordinator (OSC) for its area, works with state and local officials to expedite decision-making during response activities. These committees also work with state and local officials to enhance the contingency planning of those officials, and to assure planning for joint response efforts. To accomplish this, Area Committees develop Area Contingency Plans (ACPs). In developing an ACP, the OSC coordinates with affected State Emergency Planning Committees, (SERCs) and Local Emergency Planning Committees (LEPCs) [30 CFR 300.210(c)]. Each ACP contains geographical, resource, policy, and coordinated planning information necessary to focus on preparedness and response activities in its specific area.

While geographic boundaries of LEPCs and Area Committees may differ, their planning and response mandates are overlapping and complementary. Therefore,

coordination of their separate activities is highly beneficial and strongly encouraged. The goal of coordinated planning is preparedness for effective response by federal, state, and local agencies, as well as private sector responders.

Each case study is intended to highlight how coordination was accomplished and how it improved response effectiveness. By summarizing examples of coordinated planning activities, the NRT hopes to encourage replication of these successful practices around the country. This study and a fact sheet can be found on NRT's website (What's New link) address given below.

For additional information on the study or any other NRT initiatives, please contact:

National Response Team
US EPA (MC 5104)
401 M Street, SW
Washington, DC 20460
Tel: (202) 260-3315
Fax: (202) 260-0154
http://www.nrt.org

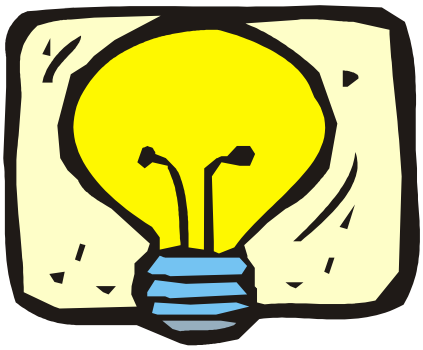
Orimulsion

This past June, Governor Lawton Chiles and his cabinet refused to grant a necessary permit for Florida Power and Light's (FPL) plans to burn Orimulsion, a bitumen-based heavy fuel oil, in its Parrish, Florida power plant. The rejection was partly due to uncertainty about the environmental risks it would pose in the event of a spill.

Orimulsion's opponents doubt that existing oil spill management technologies, which skim or contain spills on or close to the surface, would be effective in Orimulsion spills. This fuel behaves differently in saltwater and freshwater because of its density. Therefore, it can form a slick on top of the water or disperse in the water column, depending on the environmental conditions. Environmental groups fear it will clog to shallow areas where plants and animals breed. Moreover, the surfactant in Orimulsion, nonylphenol ethoxylate (NPE), degrades into alkyphenols, highly persistent chemicals being phased out by 14 North Sea countries because they mimic natural hormones in animals. Witnesses for environmental groups testified that these cleaners, and that additional contamination from an Orimulsion spill could trigger reproductive problems in wildlife.

In addition to provoking the concern of Florida residents, the proposed use of Orimulsion has also drawn the attention of federal agencies. The National Academy of Science's Committee on Marine Transportation of Heavy Oils has been asked to examine Orimulsion and other heavy oils, and the effectiveness of spill response equipment.

Producers and potential users of Orimulsion believe such concerns are overblown. While the potential impacts of a spill are unknown, proponents contend that the risks would be greatly reduced by the use of double-hulled tankers. Orimulsion's proponents suggest that it actually presents less risk than the No. 6 fuel oil currently



burned at the plant. Further, Bitor America Corporation, the Venezuelan producer, has developed and tested a special boom with aerators to contain spills. Opponents questioned whether early tests to contain the fuel under still water conditions would be applicable to real life situations.

In addition to spill worries, people expressed concerns about the added emissions when burning Orimulsion. Although FPL concedes that emissions may increase, it claims that cost savings from Orimulsion ($3.8 billion over 20 years) would allow it to install improved pollution control technologies that will result in cleaner air. Although Bitor is marketing Orimulsion as a cleaner fuel, others contend that Orimulsion's viscosity may cause it to be more environmentally persistent than more traditional fuel sources such as natural gas. The U.S. EPA will be conducting studies of the air emissions from the burning of Orimulsion.

Regulators, analysts, and emergency response professionals may soon face the Orimulsion question again as other utilities consider it's use.

Oil Spill Prevention and Response:

Federal Roles and Responsibilities

Oil spill prevention and response activities have fallen under the jurisdiction of many governmental agencies since the passage of the Clean Water Act of 1972. Before the implementation of the Oil Pollution Act of 1990, the EPA and the Department of Transportation (DOT) shared responsibility for regulating discharges of oil from vessels and production and storage facilities. The signing of Executive Order 12777 in 1991 strengthened the Oil Pollution Act by delegating authority to EPA, DOT, and the Department of Interior's (DOI's) Minerals Management Service.

Under the Oil Pollution Prevention Regulation, Title 40 Code of Federal Regulations Part 112, EPA is responsible for the regulation of nontransportation-related onshore facilities and certain offshore facilities. The Oil Program Center and the Office of Underground Storage Tanks are within the Office of Solid Waste and Emergency Response and provide regional offices with guidance on response actions and regulatory developments. Other EPA offices that assist in oil spill prevention include the Chemical Emergency Preparedness and Prevention Office and the Office of Enforcement and Compliance Assurance. These offices assist with the development of guidelines for minimizing the risk of accidental oil discharges and facilitating emergency response activities.

With the Environmental Response Team, EPA also serves as the On Scene Coordinator (OSC) and provides technical expertise in response to inland oil spills. Regional oil program teams and the ERT form the "front line" of oil spill prevention and cleanup. These teams work together with local officials and potentially responsible parties to coordinate rapid, effective responses to inland oil spills.

The U.S. Coast Guard (USCG) and the Office of Pipeline Safety are responsible for implementing the Oil Pollution Act within the DOT. These organizations regulate the transportation of oil in marine vessels, pipelines, and truck and railroad tankers. Funding for the pipeline safety program is provided by user fees assessed on a per-mile basis. USCG involvement includes the operation of the National Response Center and the National Strike Force, which specialize in responding to marine spills.

DOI's Minerals Management Service is responsible for spill prevention, OSCs, equipment, financial responsibility certification, and civil penalties. The DOI manages the implementation of OPA for offshore facilities and their associated pipelines. Native American lands and U.S. Territories also fall under the jurisdiction of the DOI.

Visit the Oil Spill Program at:

http://www.epa.gov/oilspill

There are a number of other government agencies who are involved in oil spill response. The Department of Defense and the Department of Energy provide expertise and technical assistance for facilities both within and outside their own jurisdiction. Technical assistance in assessing spill impacts and responding to oil spill emergencies is also provided by the Federal Emergency Management Agency, the U.S. Department of Agriculture, and the Department of Health and Human Services. The Department of Commerce, the Department of Justice, the Department of Labor, and the Department of State may also play important technical, administrative, and management roles in the regulation and litigation of oil spill responses.

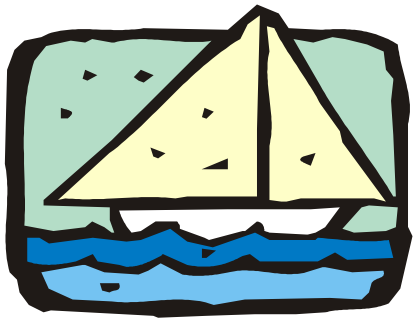
The Clean Water Trust

Since its inception in 1993, the Clean Water Trust has been instrumental in developing projects and materials that promote environmentally responsible recreation. The nonprofit organization has coordinated nationwide efforts among agencies, environmental groups, and boaters to minimize environmental risks associated with marinas and boating. The Trust conducts outreach and provides practical and balanced information to boaters and marina operators who have a vested interest in maintaining a clean and healthy boating environment.

The Clean Water Trust has been involved in a number of projects

that promote clean boating practices. Several brochures were produced by the Trust in 1994 to make boaters and marina operators aware of issues relating to boat sewage and the Clean Vessel Act. The "Help Stop the Drops" campaign educated people boaters and marina operators on environmentally sound ways to refuel, maintain, and operate marine engines through the development and distribution of custom-tailored outreach materials, and by conducting fieldwork at marinas in the Gulf of Mexico. "Stash your Trash" worked to reduce marine debris by promoting stewardship and voluntary compliance of existing litter laws, and boosting participation in coastal cleanups. In addition, the "Fish Tag and Release" program promotes ethical fishing and encourages angler participation in National Marine Fisheries research.

The need to facilitate understanding of environmentally sound practices among boaters and marina managers comes from the implementation of the Coastal Zone Act Reauthorization Amendment (CZARA) of 1990. This act established the clean marina program and is regulated jointly by the National Oceanic and Atmospheric Administration and EPA. Enforcement under CZARA is a combination of voluntary and state supported policies and mechanisms. States may expand the requirements but must implement CZARA reform by 2009. CZARA is supplemented by Subpart J of the National Contingency Plan, which calls for the development of best management practices to reduce oil spillage in marinas and eliminate the inappropriate use of dispersant and surface cleaning agents.



The goal of CZARA is to implement economically feasible management measures for minimizing the discharge of pollutants into water resources. Marinas are typically considered nonpoint sources of contamination where common sense management strategies may provide remarkable improvements in environmental quality. Economic feasibility of CZARA actions may lead to cost cutting and efficiency that will save money for marinas and encourage growth in economic sectors associated with clean water.

Some of the actions contained in CZARA include more careful fueling with the use of absorbent pads to collect any spillage. The use of biodegradable cleaning agents and waste recycling programs will reduce the impact of marinas to the waterways on which they depend. New marinas will have better flushing, sewage, and dredging mechanisms to maintain the necessary dissolved oxygen content of the water. The design of new marinas will also account for shore stabilization, cleaner fueling stations, and habitat assessment.

The success of CZARA programs depends in large part on the effective communication between agencies, marina operators, and boaters. Implementing the clean marina program requires the active participation of marina managers and boaters to ensure success. Nonprofit organizations like the Clean Water Trust play an important role in the success of better environmental management by fostering community understanding of environmental processes, translating laws into practical "how to" language, and encouraging voluntary compliance. For more information please contact the Trust. It is located at 880 South Pickett Street, Alexandria, Virginia, 22304; tel: (703) 823-9550; fax: (703) 461-2855; e-mail: ***cleanh2o@erols.com***.

International Marina Institute Holding Annual Convention

The International Marina Institute is holding its Annual Convention, Conference, and Trade Show December 6-9, 1998, in Annapolis, Maryland. The convention will include a tour of marinas, including a drive through three marinas in the immediate vicinity, to be held on December 6. Meetings and seminars will be given for the remainder of the conference, including a discussion of Maryland Clean Marina Guidelines, and a preview of the National Recreation Lake Study Commission Report. Registration must be received by November 20, 1998. For more information about the conference or registration, please call (941) 480-1212.

NGA Releases Paper on Oil Program MOAs

The National Governors' Association (NGA) Center for Best Practices recently released a *StateLine* that examines issues relating to oil program memorandums of agreement (MOAs). MOAs between state and federal agencies are effective tools that increase the efficiency of oil spill prevention, preparedness, and response programs. MOAs clarify roles, streamline communications, and coordinate the regulatory and inspection efforts of states and EPA.

Actual language from agreements between EPA and Alaska, New Jersey, Virginia, and Washington is organized into eight categories and presented in a matrix contained in the report. These categories are based on those drafted by the U.S. Coast Guard's Office of Marine Safety, Security, and Environmental Protection. States can refer to this matrix for sample language when negotiating their own agreements with EPA.

However, MOAs provide only a partial and short-term solution to the problem of overlapping state and federal authority in this area. Several states have advocated delegation of authority from EPA as a more effective and permanent solution. Toward this end, the paper discusses the States/British Columbia Task Force's resolution on delegated authority adopted in July 1997.

Copies of this paper may be obtained from Jim Whitter of the NGA Center's Natural Resources Policy Studies Division [(202) 624-7825 or ***jwhitter@nga.org***]. The paper is also available on the NGA Center website at ***www.nga.org/cbp/activities/emergencymgt.asp***. The matrix is not currently available online.

On-Scene Coordinators Area Response System:

Real Time Geographic Information for Emergency Response

EPA's Region 6 Technical Assistance Team has developed a Geographic Information System to aid On-Scene Coordinators (OSCs) during an emergency response and for inspection purposes. The system, known as the On-Scene Coordinators Area Response System (OSCARS), is fully field deployable and provides OSCs with a graphical user interface that links spacial data with geographic information. In addition to basic geographic information, such as locations of lakes, rivers, roads, and county boundaries, the system can inform OSCs about industrial infrastructure, such as gas pipelines and regulated facilities, local population data, natural disasters, soil corrosion data, endangered species, and sensitive resources like national parks. The data in OSCARS can be queried or sorted, and results can be displayed graphically on a map or viewed in a tabular format. These functions provide OSCs with real time responses to questions about what is near the scene of an emergency and what might be at risk. It is also a way to use risk-based information to target Spill Prevention, Control and Countermeasure (SPCC) and Facility Response Plan (FRP) inspections.

The OSCARS system is especially important in Region 6, where EPA has determined that 116 counties exhibit "high risk" characteristics. These counties are home to industries that either have a history of high spill rates or have the potential to cause significant and substantial harm to the environment or public health if a large release occurs. Thus, the development of OSCARS has been geared towards obtaining information in high risk counties.

For more information about OSCARS or for a comprehensive list of the data it contains please contact Don Smith at (214) 665-6489.

In Situ Burning of Oil Spills Workshop

On November 2-4, 1998, the National Institute of Standards and Technology will host a workshop on *in situ* burning of oil spills. The workshop, which is sponsored by the Minerals Management Service, will convey the results of research on *in situ* burning to local, state, federal, environmental, and academic communities. This two-and-a-half day event will revolve around presentations of pre-distributed technical papers. Workshop participants will be able to attend one of two panel groups—one will focus on burning operations, and the other will cover environmental and human health aspects of *in situ* burning. The workshop will be held at the Doubletree Hotel in New Orleans, Louisiana. Participants who register before October 19, 1998 will have their names published on a list of preliminary participants. Hotel reservations may be made by calling the Double Tree Hotel at 1-800-222-TREE or (504) 581-1300. More detailed information on the ***In Situ* Burning of Oil Spills Workshop** may be obtained by contacting Nora Jason at (301) 975-6862 (technical) or Lori Phillips at (301) 975-4513 (registration).

Spill Response Counter-measures Workgroup

The Region 3 Regional Response Team is a group of federal and state agency representatives which assists federal On-Scene Coordinators (OSCs) in EPA and the U.S. Coast Guard with spill preparedness and response. The Spill Response Countermeasures Workgroup was formed to focus on the Region-wide operational aspects of oil spills. A key aspect of Workgroup activities is to develop timesaving, practical, technical products that will help OSCs make the best possible response decisions, particularly on specialized topics with which they are likely to have limited familiarity. The 1998 Work Plan for the Workgroup consists of several tasks, including the following:

- Develop an alternative countermeasures database for use in the inland zone;
- Develop a bioremediation policy and plan for Region 3;
- Develop a spill countermeasures database for OSCs;
- Update information for OSCs on new response technologies; and
- Provide Internet access to Workgroup products to OSCs and other Regions.

Alternative countermeasures are those which are not traditionally used in spill response, such as bioremediation, dispersants, and *in-situ* burning. They also include mechanical strategies which are unusual in some way, like fast-water booming techniques and recovery technologies for "heavy" oils (i.e., those which sink in fresh and salt water). The intent of the Workgroup is to provide information to OSCs on countermeasure techniques which are infrequently used and have special conditions limiting their use, but have value in certain situations. Responders would like to use all available tools, yet it is unclear when using these specialty tools will provide a greater environmental benefit than not using them. This year, the Workgroup is concentrating on defining when and how it is appropriate to use specialty tools on oil spills in marine and freshwater environments, and on producing easy-to-use and accessible information for OSCs in Region 3, as well as sharing the information with other EPA regions. For additional information, please contact Linda Ziegler, Chair of the Spill Response Countermeasures Workgroup, at (215) 814-3277.

1998 EPA Region 9 Regional Fuels Management Workshop

EPA Region 9 will sponsor its first interagency Regional Fuels Management Workshop November 3-4, 1998, at the Cliffs at Shell Beach, located in San Luis Obispo County, California. The workshop will provide an opportunity for local, state, and federal regulatory

personnel to share information concerning the prevention, response, and remediation of hydrocarbon releases. The goal of this meeting is largely to encourage an open dialogue between the organizations to identify key problem areas and develop potential resolutions for handling future issues. Keynote speakers are Jack Doyle, author of "Crude Awakening," and Allan Biaggi, Administrator of the Nevada Department of Environmental Quality. Roundtable discussions and workgroup topics, such as pipeline safety, gasoline stations, underground storage tanks, production fields, refineries, fuel-related testing, and monitoring are planned. For more information on the workshop, contact Gail Thomas at (415) 744-2339, or e-mail ***thomas.gail@epamail.epa.gov***.

National Problem Oil Pits Conference

The U.S. EPA Region VIII and U.S. Fish and Wildlife Service Region VI are sponsoring a National Problem Oil Pits Conference to be held in Denver, Colorado, on November 17-18, 1998. EPA in Region VIII, the host of the conference, wants to share its experiences in addressing environmental challenges at problem oil pits and benefit from the experiences of other regions. The agenda is designed to provide comprehensive information to EPA Regions interested in implementing a similar program. The problem oil pits conference will focus on a multimedia approach to address oily waste issues. Areas to be covered include drilling and production oil pits; oil spills; pipeline breaks; commercial facilities; spill prevention, control, and countermeasures (SPCC) issues; and wildlife mortality. For more information regarding the technical content of the conference please call Hal Dunning, U.S. EPA Region VIII at (303) 312-6633. For questions regarding registration, please call Brooke Winter, Tetra Tech EM Inc. at (303) 295-1101. Deadline to register is October 14.

NCP's 30th Anniversary

The National Oil and Hazardous Substances Pollution Contingency Plan, more commonly called the National Contingency Plan (NCP), celebrates its 30th anniversary in November. The NCP is the federal government's blueprint for responding to both oil spills and hazardous substance releases. It is the result of our country's efforts to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans.

The first NCP was developed and published on November 14, 1968 in response to a massive oil spill from the oil tanker Torrey Canyon off the coast of England the year before—more than 37 million gallons of crude oil spilled, causing massive environmental damage. To avoid the problems faced by response officials involved in this incident, U.S. officials developed a coordinated approach to cope with potential spills in U.S. waters. The 1968 Plan provided the first comprehensive system of accident reporting, spill containment, and cleanup, and established a response headquarters, a national reaction team, and regional reaction teams (precursors to the current National Response Team and Regional Response Teams).

NOTE: Please watch for a complete update on the 30th anniversary of the NCP on our next edition of the Oil Spill Program Update which will feature anniversary articles among other stories.

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